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ABSTRACT

In a longitudinal study comparing two different methods of handwriting instruction, the manuscript and cursive styles of D'Nealian and Zaner Bloser were compared. Subjects were 86 first and second graders, from four classrooms in a rural Illinois school district, taught according to only one or the other of these methods since kindergarten. A primary grade teacher, with experience teaching both styles of writing and trained to use the handwriting error analysis scale, rated writing samples of first graders (taken in November) and second graders (taken in November and April). Manuscript samples written at the first grade level showed no significant differences. However, the D'Nealian method produced fewer letter reversals and a significant correlation to beginning reading achievement. At the second grade level, the third handwriting sample was written in manuscript while the fourth was in cursive. The Zaner Bloser group performed significantly better in cursive writing in all categories except one, while the D'Nealian group had a higher correlation between handwriting legibility and word reading. The mixed results suggest that while the D'Nealian method shows promise, the Zaner Bloser method still merits consideration when choosing a handwriting method. (Samples of student writing are attached.) (EL)

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A COMPARISON OF HANDWRITING STRATEGIES FOR PRIMARY GRADE STUDENTS

A revolution is taking place in our nation's schools but it doesn't involve microchips and video display units. Rather two inexpensive materials readily found in every student's desk are utilized - a pencil and paper. What is this revolution? Why handwriting, of course!

Historically, early handwriting measures stressed its aesthetic qualities with teachers emphasizing "beautiful" handwriting in their instruction, often giving awards for outstanding penmanship. Present day teaching methods emphasize legibility since the sole purpose of handwriting is whether or not it is readable (Fisher and Terry, 1982).

Spurred on by society's support of the back to basics movement and its rekindled interest in calligraphy, educators are suddenly alarmed at the poor handwriting skills of elementary and high school students. Even at the college level, students seem to lack pride in their penmanship. After having several words marked wrong on a spelling test because the instructor couldn't read the sloppy handwriting, one education major remarked that "the directions didn't say you had to write legibly."

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Many school districts, seeking to ease their penmanship problems, have turned to the D'Nealian handwriting approach which was developed in the mid 1960's by Donald Neal Thurber, a Michigan educator. Tossing aside the traditional circles and sticks of the Palmer and Zaner Bloser handwriting methods, Thurber introduced the "continuous stroke" to manuscript, creating the greatest innovation in the teaching of handwriting since manuscript first entered primary classrooms.

Review of the Literature

Based on the print script style of writing, manuscript handwriting derived its name from its use in the ancient preparation of documents and "manuscripts." In 1913, the present use of this style of handwriting was introduced in England by Edward Johnson. Marjorie Wise brought the manuscript style to the United States in 1921 when she taught a course in manuscript handwriting at Columbia University (Horton, 1972). Previously, students were taught to write in cursive. Even the reknown McGuffey Readers contained handwriting lessons, all of which were in cursive.

Manuscript handwriting, first adopted for use in laboratory and private schools, has become universally accepted in our nations' schools. Most schools introduce manuscript in kindergarten or the beginning of the first grade, with the transition to cursive occurring in the second semester of the second grade or the beginning of the third grade.

In 1945, Freeman (1947) surveyed nearly 1,000 teachers in city school systems to discover the advantages and disadvantages of manuscript handwriting. Freeman found some of the following advantages: 1) Manuscript is easy to write; 2) It has advantages in learning to read; 3) Aids spelling; and 4) Motor development of young children lends itself best to manuscript handwriting. Teachers listed disadvantages as being: 1) Some teachers have not been adequately trained in manuscript handwriting; 2) Home pressures require that cursive handwriting be taught; 3) The transition from manuscript to cursive is difficult; and 4) Two handwriting skills must be taught.

Proponents of the D'Nealian approach point out the ease of transition from manuscript to cursive since it is, in essence, more of a "modified cursive" than a "modified manuscript." The continuous stroke enables the child to develop rhythm by keeping the writing instrument on the paper until the letter is formed completely. Only five letters (f, i, j, t, and x) necessitate lifting the pencil or pen from the page and making another stroke to complete the lower case letter. Other handwriting approaches require two or more strokes for nineteen of the twenty six letters (a, b, d, e, f, g, h, i, j, k, m, n, p, q, r, t, w, x, and y). (See Figure 1)

D'Nealian does not demand perceptual-motor skills to the same extent as does the Palmer and Zaner Bloser methods. The child does not have to precisely place the "bat next to the

ball." Rather, the letter flows in a continuous stroke. For this reason, children using the D'Nealian style are supposed to have fewer letter reversals (i.e. b for d, p for q).

D'Nealian cursive lower case letters require that the child make beginning and ending strokes. Anderson and Lapp (1979) stated that such strokes can increase legibility by up to 25 percent. The Zaner Bloser method does not use beginning and ending strokes. (See Figure 2)

School districts have adopted D'Nealian with relatively little scrutinization. Because D'Nealian manuscript does not need to be unlearned later, unlike the Palmer and Zaner Bloser method, and because D'Nealian readily lends itself to the transition to cursive due to the continuous strokes and slanting of letters from the beginning, many primary teachers eagerly hail it as the end-all, cure-all approach to the teaching of handwriting. In addition, Thurber's claim that students using the D'Nealian method are usually at least a half a year ahead of their peers in handwriting (Ice, 1980) has both teachers and administrators applauding the method.

Opponents to D'Nealian question whether or not children's reading skills are affected by use of such an approach. Koppitz (1963), an author of the Bender-Gestalt Test for Young Children, stated that it "appears that good reading ability is related to the correct perception of the direction and the shape of forms and designs" (p. 66). Three of the five major instructional areas in reading readiness - visual discrimination, motor training,

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and letter-word discrimination - (Spache & Spache, 1977) are present in teaching handwriting. Hildreth (1944) wrote that, "One of the advantages of manuscript writing is its aid to reading" (p. 87). Harris and Sipay (1980) and Otto, McCenemy, and Smith (1973) agree that handwriting problems frequently occur in poor readers.

D'Nealian permits children to slant letters to the left, right, or with no slant (vertical letters). Those children who slant their letters are expected to learn to read with letters with no slant. The shape of the letters in printed material differs from that of D'Nealian. While Palmer and Zaner Bloser styles are not exact replications of the graphics used in textbooks, both more closely resemble printed text than does D'Nealian.

Other than Thurber's own research, little has been done to compare D'Nealian with other handwriting methods. Adoption of D'Nealian has largely been on the basis of theory and teachers' praises. Meanwhile, Scott Foresman, publisher of the D'Nealian style of handwriting has included D'Nealian in its spelling series because of the success the company has had in promoting the handwriting approach.

Purpose of the Study

This longitudinal study compared both manuscript and cursive styles of D'Nealian with the manuscript and cursive styles of Zaner Bloser. The students were first and second

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graders from four classrooms in a rural school district in Illinois. Children with perceptual-motor problems were excluded from the study. Students in the D'Nealian group had been introduced to D'Nealian in kindergarten. No other handwriting style was used. The same was true for the Zaner Bloser group. They received their initial handwriting instruction in Zaner Bloser in kindergarten and had no exposure to any other handwriting method during the school day.

The teachers had been trained in both D'Nealian and Zaner Bloser methods. Instruction time was equivalent for both treatments.

Students were given the SRA Achievement Series to determine IQ and reading ability. No significant difference was found between groups for either IQ or reading ability.

The Handwriting Error Analysis Scale developed by Faris (1976) was used to rate sample of writing taken in the first week of November and the second week in April. The Likert scale contains fifteen items, each rated from Excellent (5) to Poor (1). (See Figure 3)

Figure 3

Handwriting Error Analysis Scale

1. Extending beyond or not meeting connection points.
2. Extending above and/or below guide lines.
3. Tracing over parts of letters or numbers.

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4. Wavy or broken lines.
5. Misshapen letter formation.
6. Poor spacing between letters or numbers.
7. Poor spacing between words.
8. Letter reversals.
9. Omitted letters or numbers.
10. Misplaced letters or numbers.
11. Incorrect placement of letters.
12. Starting circles at bottom.
13. Inconsistent size.
14. Extreme pressure of lack of pressure.
15. Extreme or varied slant.

A primary grade teacher who had previously taught both the D'Nealian and Zaner Bloser styles of writing was trained in using the Handwriting Error Analysis Scale and rated the samples. T-tests were applied to the results for each scale item and the total score.

Students copied three sentences from a ditto sheet onto paper that had three guide lines. The sentences were:

The fox runs quickly.
The bear runs slow.
The pig is muddy.

Sentences rather than letters or words in isolation were used to create a realistic handwriting task for the students. A total of 10,492 letters were examined.

Stratified random sampling was used to assign the eighty-

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six students to insure that both the D'Nealian group and the Zaner Bloser group had the same ratio of left and right handed students. Students were assigned at the beginning of kindergarten. A standardized reading readiness test was administered to both groups with no significant differences found to exist between groups.

Part I: Manuscript

Manuscript samples written at the first grade level which were taken in November yielded no significant difference ($p > .05$) when they were compared with the second handwriting sample. Results of t-tests performed on each of the fifteen rating categories yielded no significant between the D'Nealian and Zaner Bloser groups for any of the scale items.

Only the letter "s" was reversed by some of the students in the D'Nealian group; however, a few of the children in the Zaner Bloser group reversed b and d, p and q, as well as the s. Thus, confirming that D'Nealian leads to fewer reversals because of the continuous design of the letters themselves.

Since previous research findings by Faris (1976) indicated a strong positive correlation between handwriting and beginning reading achievement, a reading post-test was also administered. The Pearson Product Moment correlation was used to determine whether or not a positive correlation existed between handwriting and word reading. An extremely low correlation, +.05, was found between Zaner Bloser and word reading while a significant +.56 correlation existed between D'Nealian and word reading. When

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word reading and comprehension was combined under the heading of reading, the correlation between the Zaner Bloser handwriting scores and the reading scores was a minute +.06. A +.52 correlation was recorded for the relationship between the D'Nealian handwriting style and the composite reading score.

Part II: Cursive

Handwriting samples were collected in November and April at the second grade level. The third handwriting sample was written in manuscript with the fourth sample in cursive. No significant difference ($p > .05$) was found for the cursive samples within groups.

The Zaner Bloser group performed significantly ($p < .05$) better in cursive handwriting. Children in the Zaner Bloser group did not extend strokes above or below the guidelines as those in the D'Nealian group tended to do. This was significant at the .02 level. The D'Nealian students made more misshapen letter ($p < .05$) than did the Zaner Bloser students. Inconsistency in the size of letters was also prevalent among children using the D'Nealian approach. This proved to be significant at the .001 level.

Only in one category did the D'Nealian group come close to outperforming the Zaner Bloser group. The D'Nealian group had fewer misplaced letters.

A reading post-test was also administered to both groups at the end of second grade. Again, the D'Nealian group had a significant correlation, +.49, between handwriting legibility

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and word reading. The Zaner Bloser group had a lower correlation but somewhat higher than at the first grade level.

Conclusions

Findings of this study indicate the use of D'Nealian manuscript with first graders reduced letter reversals, thus suggesting that D'Nealian may reduce perceptual-motor problems because of the reduction in the number of strokes per letter. Early et al. (1976) observed similar findings when cursive handwriting was taught to first graders. Early found fewer reversal and transposition errors resulted while reading performance was not adversely affected. Primary teachers concerned about reversals in reading will probably select D'Nealian over Zaner Bloser.

Further research of D'Nealian handwriting with children who have perceptual-motor and visual discrimination difficulties is warranted. Also studies need to be conducted with learning disabled children to see if their writing and word reading skills improve as a result of adopting this technique.

The cursive handwriting results conflict with Thurber's claim that D'Nealian is the superior method in the transition from manuscript to cursive. The Zaner Bloser group produced significantly more legible written work.

The mixed results suggest that D'Nealian shows promise. However, Zaner Bloser still merits consideration when choosing a handwriting method.

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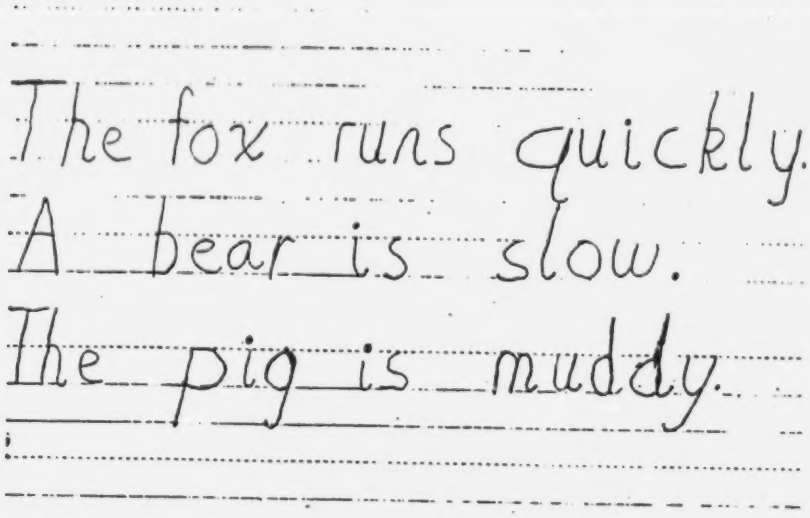
Figure 1

D'Nealian Manuscript By First Graders



Zaner Bloser Manuscript By First Graders

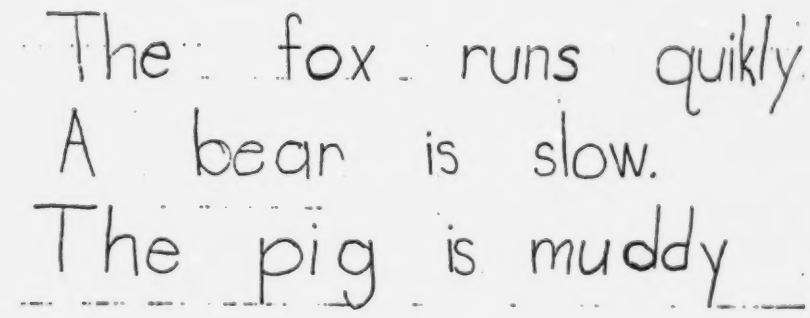


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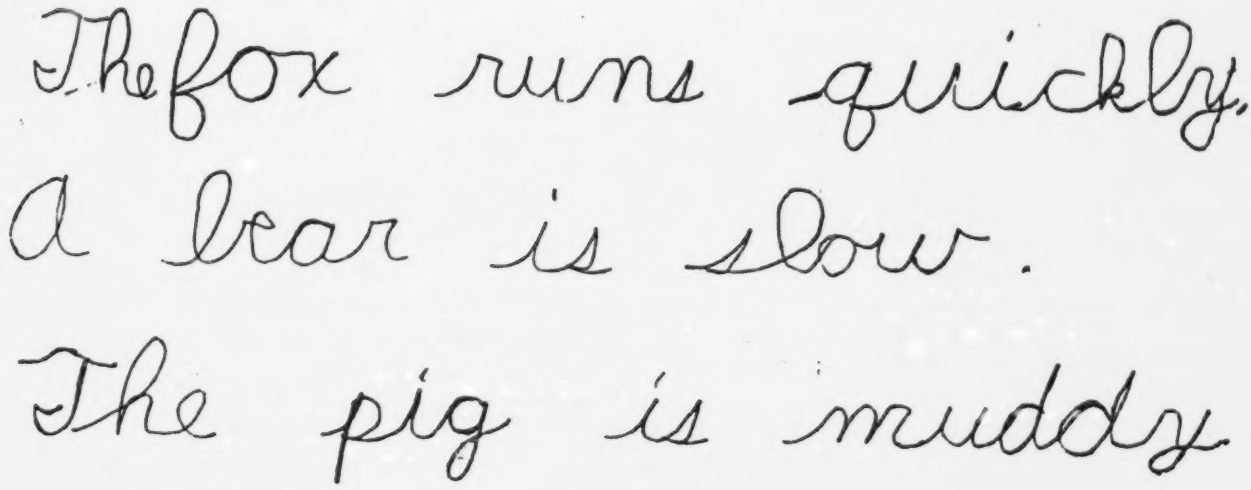
Figure 2

D'Nealian Cursive By Second Graders



Zaner Bloser Cursive By Second Graders